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TECH CENTER 1600/2900

## SEQUENCE LISTING

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<120> GFRALPHA3 AND ITS USES

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<141> 1999-03-19

<150> 60/079,124

<151> 1998-03-23

<150> 60/081,569

<151> 1998-04-13

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<211> 397

<212> PRT

<213> Mus musculus

<400> 5

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Glu	Ala	Asn	Pro	Ala	Cys	Lys	Ala	Ala	Tyr	Gln	His	Leu	Gly	Ser	Cys
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Thr	Ser	Ser	Leu	Ser	Arg	Pro	Leu	Pro	Leu	Glu	Glu	Ser	Ala	Met	Ser
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Ile	Tyr	Trp	Thr	Val	His	Pro	Ala	Arg	Ser	Leu	Gly	Asp	Tyr	Glu	Leu
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Asp	Val	Ser	Pro	Tyr	Glu	Asp	Thr	Val	Thr	Ser	Lys	Pro	Trp	Lys	Met
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145					150					155					160
Lys	Phe	Ala	Met	Leu	Cys	Thr	Leu	His	Asp	Lys	Cys	Asp	Arg	Leu	Arg
			165						170					175	
Lys	Ala	Tyr	Gly	Glu	Ala	Cys	Ser	Gly	Ile	Arg	Cys	Gln	Arg	His	Leu
			180					185					190		
Cys	Leu	Ala	Gln	Leu	Arg	Ser	Phe	Phe	Glu	Lys	Ala	Ala	Glu	Ser	His
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Leu	Gln	Asp	Glu	Cys	Glu	Gln	Leu	Glu	Arg	Ser	Phe	Ser	Gln	Asn	Pro
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Asn	Ser	Asn	Pro	Ala	Leu	Arg	Leu	Gln	Pro	Arg	Leu	Pro	Ile	Leu	Ser
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<211> 460

<212> PRT

<213> Homo sapiens

<400> 6

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Lys	Gly	Asn	Asn	Cys	Leu	Asp	Ala	Ala	Lys	Ala	Cys	Asn	Leu	Asp	Asp
145					150					155					160
Ile	Cys	Lys	Lys	Tyr	Arg	Ser	Ala	Tyr	Ile	Thr	Pro	Cys	Thr	Thr	Ser
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Val	Pro	Val	Cys	Ser	Tyr	Glu	Glu	Arg	Glu	Lys	Pro	Asn	Cys	Leu	Asn
225					230					235					240
Leu	Gln	Asp	Ser	Cys	Lys	Thr	Asn	Tyr	Ile	Cys	Arg	Ser	Arg	Leu	Ala
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Leu	Lys	Phe	Leu	Asn	Phe	Phe	Lys	Asp	Asn	Thr	Cys	Leu	Lys	Asn	Ala
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			405						410					415	
Lys	Glu	Gly	Leu	Gly	Ala	Ser	Ser	His	Ile	Thr	Thr	Lys	Ser	Met	Ala
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Ala	Pro	Pro	Ser	Cys	Gly	Leu	Ser	Pro	Leu	Leu	Val	Leu	Val	Val	Thr

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 <212> PRT  
 <213> Homo sapiens

<400> 7

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Gly	Trp	Arg	Pro	Pro	Val	Asp	Cys	Val	Arg	Ala	Asn	Glu	Leu	Cys	Ala
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Ala	Glu	Ser	Asn	Cys	Ser	Ser	Arg	Tyr	Arg	Thr	Leu	Arg	Gln	Cys	Leu
	50					55					60				
Ala	Gly	Arg	Asp	Arg	Asn	Thr	Met	Leu	Ala	Asn	Lys	Glu	Cys	Gln	Ala
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Ala	Leu	Glu	Val	Leu	Gln	Glu	Ser	Pro	Leu	Tyr	Asp	Cys	Arg	Cys	Lys
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Arg	Gly	Met	Lys	Lys	Glu	Leu	Gln	Cys	Leu	Gln	Ile	Tyr	Trp	Ser	Ile
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His	Leu	Gly	Leu	Thr	Glu	Gly	Glu	Glu	Phe	Tyr	Glu	Ala	Ser	Pro	Tyr
	115						120					125			
Glu	Pro	Val	Thr	Ser	Arg	Leu	Ser	Asp	Ile	Phe	Arg	Leu	Ala	Ser	Ile
	130					135					140				
Phe	Ser	Gly	Thr	Gly	Ala	Asp	Pro	Val	Val	Ser	Ala	Lys	Ser	Asn	His
145					150					155					160
Cys	Leu	Asp	Ala	Ala	Lys	Ala	Cys	Asn	Leu	Asn	Asp	Asn	Cys	Lys	Lys
				165					170					175	
Leu	Arg	Ser	Ser	Tyr	Ile	Ser	Ile	Cys	Asn	Arg	Glu	Ile	Ser	Pro	Thr
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Glu	Arg	Cys	Asn	Arg	Arg	Lys	Cys	His	Lys	Ala	Leu	Arg	Gln	Phe	Phe
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	210					215					220				
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Cys	Ser	Tyr	Glu	Asp	Lys	Glu	Lys	Pro	Asn	Cys	Leu	Asp	Leu	Arg	Gly
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Val	Cys	Arg	Thr	Asp	His	Leu	Cys	Arg	Ser	Arg	Leu	Ala	Asp	Phe	His
			260					265					270		
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Pro	Trp	Cys	Ser	Cys	Arg	Gly	Ser	Gly	Asn	Met	Glu	Glu	Glu	Cys	Glu
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Lys	Phe	Leu	Arg	Asp	Phe	Thr	Glu	Asn	Pro	Cys	Leu	Arg	Asn	Ala	Ile
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Gln	Ala	Phe	Gly	Asn	Gly	Thr	Asp	Val	Asn	Val	Ser	Pro	Lys	Gly	Pro
	355						360					365			

Ser	Phe	Gln	Ala	Thr	Gln	Ala	Pro	Arg	Val	Glu	Lys	Thr	Pro	Ser	Leu
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Pro	Asp	Asp	Leu	Ser	Asp	Ser	Thr	Ser	Leu	Gly	Thr	Ser	Val	Ile	Thr
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Thr	Cys	Thr	Ser	Val	Gln	Glu	Gln	Gly	Leu	Lys	Ala	Asn	Asn	Ser	Lys
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Glu	Leu	Ser	Met	Cys	Phe	Thr	Glu	Leu	Thr	Thr	Asn	Ile	Ile	Pro	Gly
			420					425					430		
Ser	Asn	Lys	Val	Ile	Lys	Pro	Asn	Ser	Gly	Pro	Ser	Arg	Ala	Arg	Pro
		435					440					445			
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<210> 8

<211> 468

<212> PRT

<213> Rattus norvegicus

<400> 8

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			20					25					30		
Ser	Asp	Gln	Cys	Leu	Lys	Glu	Gln	Ser	Cys	Ser	Thr	Lys	Tyr	Arg	Thr
		35					40					45			
Leu	Arg	Gln	Cys	Val	Ala	Gly	Lys	Glu	Thr	Asn	Phe	Ser	Leu	Thr	Ser
	50					55					60				
Gly	Leu	Glu	Ala	Lys	Asp	Glu	Cys	Arg	Ser	Ala	Met	Glu	Ala	Leu	Lys
65					70					75					80
Gln	Lys	Ser	Leu	Tyr	Asn	Cys	Arg	Cys	Lys	Arg	Gly	Met	Lys	Lys	Glu
				85					90					95	
Lys	Asn	Cys	Leu	Arg	Ile	Tyr	Trp	Ser	Met	Tyr	Gln	Ser	Leu	Gln	Gly
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Asn	Asp	Leu	Leu	Glu	Asp	Ser	Pro	Tyr	Glu	Pro	Val	Asn	Ser	Arg	Leu
		115					120					125			
Ser	Asp	Ile	Phe	Arg	Ala	Val	Pro	Phe	Ile	Ser	Asp	Val	Phe	Gln	Gln
	130					135					140				
Val	Glu	His	Ile	Ser	Lys	Gly	Asn	Asn	Cys	Leu	Asp	Ala	Ala	Lys	Ala
					150					155					160
Cys	Asn	Leu	Asp	Asp	Thr	Cys	Lys	Lys	Tyr	Arg	Ser	Ala	Tyr	Ile	Thr
				165					170					175	
Pro	Cys	Thr	Thr	Ser	Met	Ser	Asn	Glu	Val	Cys	Asn	Arg	Arg	Lys	Cys
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His	Lys	Ala	Leu	Arg	Gln	Phe	Phe	Asp	Lys	Val	Pro	Ala	Lys	His	Ser
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Tyr	Gly	Met	Leu	Phe	Cys	Ser	Cys	Arg	Asp	Ile	Ala	Cys	Thr	Glu	Arg
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Arg	Arg	Gln	Thr	Ile	Val	Pro	Val	Cys	Ser	Tyr	Glu	Glu	Arg	Glu	Arg
					230					235					240
Pro	Asn	Cys	Leu	Ser	Leu	Gln	Asp	Ser	Cys	Lys	Thr	Asn	Tyr	Ile	Cys
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Arg	Ser	Arg	Leu	Ala	Asp	Phe	Phe	Thr	Asn	Cys	Gln	Pro	Glu	Ser	Arg
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Ser	Val	Ser	Asn	Cys	Leu	Lys	Glu	Asn	Tyr	Ala	Asp	Cys	Leu	Leu	Ala
		275					280					285			
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Ser Ser Leu Ser Val Ala Pro Trp Cys Asp Cys Ser Asn Ser Gly Asn				
305		310		315
Asp Leu Glu Asp Cys Leu Lys Phe Leu Asn Phe Phe Lys Asp Asn Thr				
		325		330
Cys Leu Lys Asn Ala Ile Gln Ala Phe Gly Asn Gly Ser Asp Val Thr				
		340		345
Met Trp Gln Pro Ala Pro Pro Val Gln Thr Thr Thr Ala Thr Thr Thr				
		355		360
Thr Ala Phe Arg Val Lys Asn Lys Pro Leu Gly Pro Ala Gly Ser Glu				
		370		375
Asn Glu Ile Pro Thr His Val Leu Pro Pro Cys Ala Asn Leu Gln Ala				
385		390		395
Gln Lys Leu Lys Ser Asn Val Ser Gly Ser Thr His Leu Cys Leu Ser				
		405		410
Asp Ser Asp Phe Gly Lys Asp Gly Leu Ala Gly Ala Ser Ser His Ile				
		420		425
Thr Thr Lys Ser Met Ala Ala Pro Pro Ser Cys Ser Leu Ser Ser Leu				
		435		440
Pro Val Leu Met Leu Thr Ala Leu Ala Ala Leu Leu Ser Val Ser Leu				
		450		455
Ala Glu Thr Ser				460
465				

<210> 9

<211> 464

<212> PRT

<213> Rattus Norvegicus

<400> 9

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Gly Trp Arg Pro Gln Val Asp Cys Val Arg Ala Asn Glu Leu Cys Ala				
		35		40
Ala Glu Ser Asn Cys Ser Ser Arg Tyr Arg Thr Leu Arg Gln Cys Leu				
		50		55
Ala Gly Arg Asp Arg Asn Thr Met Leu Ala Asn Lys Glu Cys Gln Ala				
65		70		75
Ala Leu Glu Val Leu Gln Glu Ser Pro Leu Tyr Asp Cys Arg Cys Lys				
		85		90
Arg Gly Met Lys Lys Glu Leu Gln Cys Leu Gln Ile Tyr Trp Ser Ile				
		100		105
His Leu Gly Leu Thr Glu Gly Glu Glu Phe Tyr Glu Ala Ser Pro Tyr				
		115		120
Glu Pro Val Thr Ser Arg Leu Ser Asp Ile Phe Arg Leu Ala Ser Ile				
		130		135
Phe Ser Gly Thr Gly Thr Asp Pro Ala Val Ser Thr Lys Ser Asn His				
145		150		155
Cys Leu Asp Ala Ala Lys Ala Cys Asn Leu Asn Asp Asn Cys Lys Lys				
		165		170
Leu Arg Ser Ser Tyr Ile Ser Ile Cys Asn Arg Glu Ile Ser Pro Thr				
		180		185
Glu Arg Cys Asn Arg Arg Lys Cys His Lys Ala Leu Arg Gln Phe Phe				
		195		200
				205





<213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic oligonucleotide

<400> 11

gcctctcgca gccggagacc

20

<210> 12

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic oligonucleotide

<400> 12

caggtgggat cagcctggca c

21

<210> 13

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic oligonucleotide

<400> 13

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41

<210> 14

<211> 1792

<212> DNA

<213> Homo sapiens

<400> 14

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atgaacagct	gtctccaggc	caggaggaag	tgccaggctg	atcccacctg	cagtgcctgc	180
taccaccacc	tggattcctg	cacctctagc	ataagcacc	caactgcctc	agaggagcct	240
tcggtccctg	ctgactgcct	ggaggcagca	cagcaactca	ggaacagctc	tctgataggc	300
tgcatgtgcc	accggcgcat	gaagaaccag	gttgccctgct	tggaatctta	ttggaccgtt	360
caccgtgccc	gcagccttgg	taactatgag	ctggatgtct	ccccctatga	agacacagtg	420
accagcaaac	cctggaaaat	gaatctcagc	aaactgaaca	tgctcaaacc	agactcagac	480
ctctgcctca	agtttgccat	gctgtgtact	ctcaatgaca	agtgtgaccg	gctgcgcaag	540
gcctacgggg	aggcgtgctc	cgggccccac	tgccagcgcc	acgtctgcct	caggcagctg	600
ctcactttct	tcgagaaggc	cgccgagccc	cacgcgcagg	gcctgctact	gtgcccattg	660
gccccaaacg	accggggctg	cggggagcgc	cggcgcaaca	ccatcgcccc	caactgcgcg	720
ctgcgcgctg	tggcccccaa	ctgcctggag	ctgcggcgcc	tctgcttctc	cgaccgcgtt	780
tgcatatcac	gcctgggtga	tttccagacc	caactgccatc	ccatggacat	cctaggaact	840
tgtgcaacag	agcagtcagg	atgtctacga	gcatacctgg	ggctgattgg	gactgccatg	900
acccccaaact	ttgtcagcaa	tgtcaacacc	agtgttgccct	taagctgcac	ctgccgaggc	960
agtggcaacc	tgcaggagga	gtgtgaaatg	ctggaagggt	tcttctccca	caaccctgc	1020
ctcacggagg	ccattgcagc	taagatgcgt	tttcacagcc	aactcttctc	ccaggactgg	1080
ccacacccta	cctttgctgt	gatggcacac	cagaatgaaa	accctgctgt	gaggccacag	1140
ccctgggtgc	cctctctttt	ctcctgcacg	cttccttga	ttctgctcct	gagcctatgg	1200
tagctggact	tccccagggc	cctcttcccc	tccaccacac	ccaggtggac	ttgcagccca	1260

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caaggggtga ggaaaggaca gcagcaggaa ggaggtgcag tgcgcagatg agggcacagg 1320
agaagctaag gggtatgacc tccagatcct tactgggtcca gtcctcattc cctccacccc 1380
atctccactt ctgattcatg ctgcccctcc ttgggtggcca caatttagcc atgtcatctg 1440
gtgggtgacca gctccaccaa gcccttttct gagcccttcc tcttgactac caggatcacc 1500
agaatctaata aagttagcct ttctctattg cattccagat taggggttagg gtagggagga 1560
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cctgccgaac atctgggcat caggagctgg agcctgtggg ccttgcttta ttctattat 1740
tgtcctaaag tctctctggg ctcttgatc atgattaaac ctttgactta ag 1792

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<210> 15

<211> 400

<212> PRT

<213> Homo Sapiens

<400> 15

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Leu Leu Leu Leu Leu Pro Pro Ser Pro Leu Pro Leu Ala Ala Gly Asp
20          25          30
Pro Leu Pro Thr Glu Ser Arg Leu Met Asn Ser Cys Leu Gln Ala Arg
35          40          45
Arg Lys Cys Gln Ala Asp Pro Thr Cys Ser Ala Ala Tyr His His Leu
50          55          60
Asp Ser Cys Thr Ser Ser Ile Ser Thr Pro Leu Pro Ser Glu Glu Pro
65          70          75          80
Ser Val Pro Ala Asp Cys Leu Glu Ala Ala Gln Gln Leu Arg Asn Ser
85          90          95
Ser Leu Ile Gly Cys Met Cys His Arg Arg Met Lys Asn Gln Val Ala
100         105         110
Cys Leu Asp Ile Tyr Trp Thr Val His Arg Ala Arg Ser Leu Gly Asn
115         120         125
Tyr Glu Leu Asp Val Ser Pro Tyr Glu Asp Thr Val Thr Ser Lys Pro
130         135         140
Trp Lys Met Asn Leu Ser Lys Leu Asn Met Leu Lys Pro Asp Ser Asp
145         150         155         160
Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu Asn Asp Lys Cys Asp
165         170         175
Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser Gly Pro His Cys Gln
180         185         190
Arg His Val Cys Leu Arg Gln Leu Leu Thr Phe Phe Glu Lys Ala Ala
195         200         205
Glu Pro His Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Asn Asp
210         215         220
Arg Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Asn Cys Ala
225         230         235         240
Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys Phe
245         250         255
Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His Cys
260         265         270
His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg Cys
275         280         285
Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn Phe
290         295         300
Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg Gly
305         310         315         320
Ser Gly Asn Leu Gln Glu Glu Cys Glu Met Leu Glu Gly Phe Phe Ser

```



Leu Leu Leu Leu Leu Pro Pro Ser Pro Leu Pro Leu Ala Ala Gly Asp  
 20 25 30  
 Pro Leu Pro Thr Glu Ser Arg Leu Met Asn Ser Cys Leu Gln Ala Arg  
 35 40 45  
 Arg Lys Cys Gln Ala Asp Pro Thr Cys Ser Ala Ala Tyr His His Leu  
 50 55 60  
 Asp Ser Cys Thr Ser Ser Ile Ser Thr Pro Leu Pro Ser Glu Glu Pro  
 65 70 75 80  
 Ser Val Pro Ala Asp Cys Leu Glu Ala Ala Gln Gln Leu Arg Asn Ser  
 85 90 95  
 Ser Leu Ile Gly Cys Met Cys His Arg Arg Met Lys Asn Gln Val Ala  
 100 105 110  
 Cys Leu Asp Ile Tyr Trp Thr Val His Arg Ala Arg Ser Leu Asp Ser  
 115 120 125  
 Asp Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu Asn Asp Lys Cys  
 130 135 140  
 Asp Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser Gly Pro His Cys  
 145 150 155 160  
 Gln Arg His Val Cys Leu Arg Gln Leu Leu Thr Phe Phe Glu Lys Ala  
 165 170 175  
 Ala Glu Pro His Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Asn  
 180 185 190  
 Asp Arg Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Asn Cys  
 195 200 205  
 Ala Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys  
 210 215 220  
 Phe Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His  
 225 230 235 240  
 Cys His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg  
 245 250 255  
 Cys Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn  
 260 265 270  
 Phe Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg  
 275 280 285  
 Gly Ser Gly Asn Leu Gln Glu Glu Cys Glu Met Leu Glu Gly Phe Phe  
 290 295 300  
 Ser His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala Lys Met Arg Phe  
 305 310 315 320  
 His Ser Gln Leu Phe Ser Gln Asp Trp Pro His Pro Thr Phe Ala Val  
 325 330 335  
 Met Ala His Gln Asn Glu Asn Pro Ala Val Arg Pro Gln Pro Trp Val  
 340 345 350  
 Pro Ser Leu Phe Ser Cys Thr Leu Pro Leu Ile Leu Leu Leu Ser Leu  
 355 360 365  
 Trp

<210> 18

<211> 628

<212> PRT

<213> Unknown

<220>

<223> Unknown = IgG-tagged chimeric receptor

<400> 18

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Leu	Leu	Leu	Leu	Leu	Pro	Pro	Ser	Pro	Leu	Pro	Leu	Ala	Ala	Gly	Asp
			20					25					30		
Pro	Leu	Pro	Thr	Glu	Ser	Arg	Leu	Met	Asn	Ser	Cys	Leu	Gln	Ala	Arg
	35					40					45				
Arg	Lys	Cys	Gln	Ala	Asp	Pro	Thr	Cys	Ser	Ala	Ala	Tyr	His	His	Leu
	50				55					60					
Asp	Ser	Cys	Thr	Ser	Ser	Ile	Ser	Thr	Pro	Leu	Pro	Ser	Glu	Glu	Pro
65					70					75					80
Ser	Val	Pro	Ala	Asp	Cys	Leu	Glu	Ala	Ala	Gln	Gln	Leu	Arg	Asn	Ser
			85					90						95	
Ser	Leu	Ile	Gly	Cys	Met	Cys	His	Arg	Arg	Met	Lys	Asn	Gln	Val	Ala
			100					105					110		
Cys	Leu	Asp	Ile	Tyr	Trp	Thr	Val	His	Arg	Ala	Arg	Ser	Leu	Gly	Asn
		115					120					125			
Tyr	Glu	Leu	Asp	Val	Ser	Pro	Tyr	Glu	Asp	Thr	Val	Thr	Ser	Lys	Pro
	130					135					140				
Trp	Lys	Met	Asn	Leu	Ser	Lys	Leu	Asn	Met	Leu	Lys	Pro	Asp	Ser	Asp
145					150					155					160
Leu	Cys	Leu	Lys	Phe	Ala	Met	Leu	Cys	Thr	Leu	Asn	Asp	Lys	Cys	Asp
				165					170					175	
Arg	Leu	Arg	Lys	Ala	Tyr	Gly	Glu	Ala	Cys	Ser	Gly	Pro	His	Cys	Gln
			180					185					190		
Arg	His	Val	Cys	Leu	Arg	Gln	Leu	Leu	Thr	Phe	Phe	Glu	Lys	Ala	Ala
		195					200					205			
Glu	Pro	His	Ala	Gln	Gly	Leu	Leu	Leu	Cys	Pro	Cys	Ala	Pro	Asn	Asp
	210					215					220				
Arg	Gly	Cys	Gly	Glu	Arg	Arg	Asn	Thr	Ile	Ala	Pro	Asn	Cys	Ala	
225					230				235						240
Leu	Pro	Pro	Val	Ala	Pro	Asn	Cys	Leu	Glu	Leu	Arg	Arg	Leu	Cys	Phe
			245						250					255	
Ser	Asp	Pro	Leu	Cys	Arg	Ser	Arg	Leu	Val	Asp	Phe	Gln	Thr	His	Cys
			260					265					270		
His	Pro	Met	Asp	Ile	Leu	Gly	Thr	Cys	Ala	Thr	Glu	Gln	Ser	Arg	Cys
		275					280					285			
Leu	Arg	Ala	Tyr	Leu	Gly	Leu	Ile	Gly	Thr	Ala	Met	Thr	Pro	Asn	Phe
	290					295					300				
Val	Ser	Asn	Val	Asn	Thr	Ser	Val	Ala	Leu	Ser	Cys	Thr	Cys	Arg	Gly
305					310					315					320
Ser	Gly	Asn	Leu	Gln	Glu	Glu	Cys	Glu	Met	Leu	Glu	Gly	Phe	Phe	Ser
				325					330					335	
His	Asn	Pro	Cys	Leu	Thr	Glu	Ala	Ile	Ala	Ala	Lys	Met	Arg	Phe	His
			340					345					350		
Ser	Gln	Leu	Phe	Ser	Gln	Asp	Trp	Pro	His	Pro	Thr	Phe	Ala	Val	Met
		355					360					365			
Ala	His	Gln	Asn	Glu	Asn	Pro	Ala	Val	Arg	Pro	Gln	Pro	Trp	Val	Pro
	370					375					380				
Ser	Leu	Phe	Ser	Cys	Thr	Leu	Pro	Leu	Ile	Leu	Leu	Ser	Leu	Trp	
385					390					395					400
Pro	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu
				405					410					415	
Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu
			420					425					430		
Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser
		435					440					445			
His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu

450		455		460
Val His Asn Ala Lys Thr	Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr			
465		470		480
Tyr Arg Val Val Ser Val	Leu Thr Val Leu His Gln Asp Trp Leu Asn			
	485		490	495
Gly Lys Glu Tyr Lys Cys	Lys Val Ser Asn Lys Ala Leu Pro Ala Pro			
	500		505	510
Ile Glu Lys Thr Ile Ser	Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln			
	515		520	525
Val Tyr Thr Leu Pro Pro	Ser Arg Glu Glu Met Thr Lys Asn Gln Val			
	530		535	540
Ser Leu Thr Cys Leu Val	Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val			
545		550		560
Glu Trp Glu Ser Asn Gly	Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro			
	565		570	575
Pro Val Leu Asp Ser Asp	Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr			
	580		585	590
Val Asp Lys Ser Arg Trp	Gln Gln Gly Asn Val Phe Ser Cys Ser Val			
	595		600	605
Met His Glu Ala Leu His	Asn His Tyr Thr Gln Lys Ser Leu Ser Leu			
	610		615	620
Ser Pro Gly Lys				
625				

<210> 19  
 <211> 951  
 <212> PRT  
 <213> Unknown

<220>  
 <223> Unknown = chimeric receptor

<400> 19
Met Gly Gly Thr Ala Ala Arg Leu Gly Ala Val Ile Leu Phe Val Val
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Ile Val Gly Leu His Gly Val Arg Gly Lys Tyr Ala Leu Ala Asp Ala
20 25 30
Ser Leu Lys Met Ala Asp Pro Asn Arg Phe Arg Gly Lys Asp Leu Pro
35 40 45
Val Leu Asp Gln Leu Leu Glu Pro Ser Ser Leu Gln Gly Ser Glu Leu
50 55 60
His Gly Trp Arg Pro Gln Val Asp Cys Val Arg Ala Asn Glu Leu Cys
65 70 75 80
Ala Ala Glu Ser Asn Cys Ser Ser Arg Tyr Arg Thr Leu Arg Gln Cys
85 90 95
Leu Ala Gly Arg Asp Arg Asn Thr Met Leu Ala Asn Lys Glu Cys Gln
100 105 110
Ala Ala Leu Glu Val Leu Gln Glu Ser Pro Leu Tyr Asp Cys Arg Cys
115 120 125
Lys Arg Gly Met Lys Lys Glu Leu Gln Cys Leu Gln Ile Tyr Trp Ser
130 135 140
Ile His Leu Gly Leu Thr Glu Gly Glu Glu Phe Tyr Glu Ala Ser Pro
145 150 155 160
Tyr Glu Pro Val Thr Ser Arg Leu Ser Asp Ile Phe Arg Leu Ala Ser
165 170 175
Ile Phe Ser Gly Thr Gly Thr Asp Pro Ala Val Ser Thr Lys Ser Asn

			180					185					190			
His	Cys	Leu	Asp	Ala	Ala	Lys	Ala	Cys	Asn	Leu	Asn	Asp	Asn	Cys	Lys	
		195					200					205				
Lys	Leu	Arg	Ser	Ser	Tyr	Ile	Ser	Ile	Cys	Asn	Arg	Glu	Ile	Ser	Pro	
	210					215					220					
Thr	Glu	Arg	Cys	Asn	Arg	Arg	Lys	Cys	His	Lys	Ala	Leu	Arg	Gln	Phe	
225					230					235					240	
Phe	Asp	Arg	Val	Pro	Ser	Glu	Tyr	Thr	Tyr	Arg	Met	Leu	Phe	Cys	Ser	
				245					250					255		
Cys	Gln	Asp	Gln	Ala	Cys	Ala	Glu	Arg	Arg	Arg	Gln	Thr	Ile	Leu	Pro	
			260					265				270				
Ser	Cys	Ser	Tyr	Glu	Asp	Lys	Glu	Lys	Pro	Asn	Cys	Leu	Asp	Leu	Arg	
		275					280					285				
Ser	Leu	Cys	Arg	Thr	Asp	His	Leu	Cys	Arg	Ser	Arg	Leu	Ala	Asp	Phe	
	290					295					300					
His	Ala	Asn	Cys	Arg	Ala	Ser	Tyr	Arg	Thr	Ile	Thr	Ser	Cys	Pro	Ala	
305					310					315					320	
Asp	Asn	Tyr	Gln	Ala	Cys	Leu	Gly	Ser	Tyr	Ala	Gly	Met	Ile	Gly	Phe	
				325					330					335		
Asp	Met	Thr	Pro	Asn	Tyr	Val	Asp	Ser	Asn	Pro	Thr	Gly	Ile	Val	Val	
			340					345					350			
Ser	Pro	Trp	Cys	Asn	Cys	Arg	Gly	Ser	Gly	Asn	Met	Glu	Glu	Glu	Cys	
		355					360					365				
Glu	Lys	Phe	Leu	Arg	Asp	Phe	Thr	Glu	Asn	Pro	Cys	Leu	Arg	Asn	Ala	
	370					375					380					
Ile	Gln	Ala	Phe	Gly	Asn	Gly	Thr	Asp	Val	Asn	Met	Ser	Pro	Lys	Gly	
385					390					395					400	
Pro	Ser	Leu	Pro	Ala	Thr	Gln	Ala	Pro	Arg	Val	Glu	Lys	Thr	Pro	Ser	
				405					410					415		
Leu	Pro	Asp	Asp	Leu	Ser	Asp	Ser	Thr	Ser	Leu	Gly	Thr	Ser	Val	Ile	
			420					425					430			
Thr	Thr	Cys	Thr	Ser	Ile	Gln	Glu	Gln	Gly	Leu	Lys	Ala	Asn	Asn	Ser	
		435					440					445				
Lys	Glu	Leu	Ser	Met	Cys	Phe	Thr	Glu	Leu	Thr	Thr	Asn	Ile	Ile	Pro	
	450					455					460					
Gly	Trp	Arg	Ala	Trp	Val	Pro	Val	Val	Leu	Gly	Val	Leu	Thr	Ala	Leu	
465					470					475					480	
Val	Thr	Ala	Ala	Ala	Leu	Ala	Leu	Ile	Leu	Leu	Arg	Lys	Arg	Arg	Lys	
				485					490					495		
Glu	Thr	Arg	Phe	Gly	Gln	Ala	Phe	Asp	Ser	Val	Met	Ala	Arg	Gly	Glu	
			500					505					510			
Pro	Ala	Val	His	Phe	Arg	Ala	Ala	Arg	Ser	Phe	Asn	Arg	Glu	Arg	Pro	
		515					520					525				
Glu	Arg	Ile	Glu	Ala	Thr	Leu	Asp	Ser	Leu	Gly	Ile	Ser	Asp	Glu	Leu	
		530				535										

Val	Ile	Leu	Pro	Phe	Met	Lys	His	Gly	Asp	Leu	His	Ala	Phe	Leu	Leu	
				645					650					655		
Ala	Ser	Arg	Ile	Gly	Glu	Asn	Pro	Phe	Asn	Leu	Pro	Leu	Gln	Thr	Leu	
			660					665					670			
Ile	Arg	Phe	Met	Val	Asp	Ile	Ala	Cys	Gly	Met	Glu	Tyr	Leu	Ser	Ser	
		675				680						685				
Arg	Asn	Phe	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Cys	Met	Leu	Ala	
	690					695					700					
Glu	Asp	Met	Thr	Val	Cys	Val	Ala	Asp	Phe	Gly	Leu	Ser	Arg	Lys	Ile	
705					710					715					720	
Tyr	Ser	Gly	Asp	Tyr	Tyr	Arg	Gln	Gly	Cys	Ala	Ser	Lys	Leu	Pro	Val	
			725						730					735		
Lys	Trp	Leu	Ala	Leu	Glu	Ser	Leu	Ala	Asp	Asn	Leu	Tyr	Thr	Val	Gln	
			740					745					750			
Ser	Asp	Val	Trp	Ala	Phe	Gly	Val	Thr	Met	Trp	Glu	Ile	Met	Thr	Arg	
		755					760					765				
Gly	Gln	Thr	Pro	Tyr	Ala	Gly	Ile	Glu	Asn	Ala	Glu	Ile	Tyr	Asn	Tyr	
	770					775					780					
Leu	Ile	Gly	Gly	Asn	Arg	Leu	Lys	Gln	Pro	Pro	Glu	Cys	Met	Glu	Asp	
785				790					795					800		
Val	Tyr	Asp	Leu	Met	Tyr	Gln	Cys	Trp	Ser	Ala	Asp	Pro	Lys	Gln	Arg	
			805						810					815		
Pro	Ser	Phe	Thr	Cys	Leu	Arg	Met	Glu	Leu	Glu	Asn	Ile	Leu	Gly	Gln	
			820					825					830			
Leu	Ser	Val	Leu	Ser	Ala	Ser	Gln	Asp	Pro	Leu	Tyr	Ile	Asn	Ile	Glu	
		835					840					845				
Arg	Ala	Glu	Glu	Pro	Thr	Ala	Gly	Gly	Ser	Leu	Glu	Leu	Pro	Gly	Arg	
	850					855					860					
Asp	Gln	Pro	Tyr	Ser	Gly	Ala	Gly	Asp	Gly	Ser	Gly	Met	Gly	Ala	Val	
865					870					875					880	
Gly	Gly	Thr	Pro	Ser	Asp	Cys	Arg	Tyr	Ile	Leu	Thr	Pro	Gly	Gly	Leu	
			885						890					895		
Ala	Glu	Gln	Pro	Gly	Gln	Ala	Glu	His	Gln	Pro	Glu	Ser	Pro	Leu	Asn	
			900					905					910			
Glu	Thr	Gln	Arg	Leu	Leu	Leu	Leu	Gln	Gln	Gly	Leu	Leu	Pro	His	Ser	
		915					920					925				
Ser	Cys	Ala	Asp	Ala	Ser	Leu	Lys	Met	Ala	Asp	Pro	Asn	Arg	Phe	Arg	
	930					935					940					
Gly	Lys	Asp	Leu	Pro	Val	Leu										
945					950											

<210> 20  
 <211> 888  
 <212> PRT  
 <213> Unknown

<220>  
 <223> Unknown = chimeric receptor

<400>	20															
Met	Gly	Gly	Thr	Ala	Ala	Arg	Leu	Gly	Ala	Val	Ile	Leu	Phe	Val	Val	
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Ile	Val	Gly	Leu	His	Gly	Val	Arg	Gly	Lys	Tyr	Ala	Leu	Ala	Asp	Ala	
			20					25					30			
Ser	Leu	Lys	Met	Ala	Asp	Pro	Asn	Arg	Phe	Arg	Gly	Lys	Asp	Leu	Pro	
		35					40					45				



Val	Leu	Asp	Gln	Leu	Leu	Glu	Ala	Gly	Asn	Ser	Leu	Ala	Thr	Glu	Asn
50						55					60				
Arg	Phe	Val	Asn	Ser	Cys	Thr	Gln	Ala	Arg	Lys	Lys	Cys	Glu	Ala	Asn
65					70					75					80
Pro	Ala	Cys	Lys	Ala	Ala	Tyr	Gln	His	Leu	Gly	Ser	Cys	Thr	Ser	Ser
				85					90					95	
Leu	Ser	Arg	Pro	Leu	Pro	Leu	Glu	Glu	Ser	Ala	Met	Ser	Ala	Asp	Cys
			100					105					110		
Leu	Glu	Ala	Ala	Glu	Gln	Leu	Arg	Asn	Ser	Ser	Leu	Ile	Asp	Cys	Arg
		115					120					125			
Cys	His	Arg	Arg	Met	Lys	His	Gln	Ala	Thr	Cys	Leu	Asp	Ile	Tyr	Trp
130						135					140				
Thr	Val	His	Pro	Ala	Arg	Ser	Leu	Gly	Asp	Tyr	Glu	Leu	Asp	Val	Ser
145					150					155					160
Pro	Tyr	Glu	Asp	Thr	Val	Thr	Ser	Lys	Pro	Trp	Lys	Met	Asn	Leu	Ser
				165					170					175	
Lys	Leu	Asn	Met	Leu	Lys	Pro	Asp	Ser	Asp	Leu	Cys	Leu	Lys	Phe	Ala
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Glu	Ala	Ile	Ala	Ala	Lys	Met	Arg	Phe	His	Arg	Gln	Leu	Phe	Ser	Gln
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Asp	Trp	Ala	Asp	Ser	Thr	Phe	Ser	Val	Val	Gln	Gln	Gln	Asn	Ser	Asn
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Pro	Ala	Trp	Arg	Ala	Trp	Val	Pro	Val	Val	Leu	Gly	Val	Leu	Thr	Ala
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Leu	Lys	Glu	Lys	Leu	Glu	Asp	Val	Leu	Ile	Pro	Glu	Gln	Gln	Phe	Thr
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Arg	Asp	Gln	Pro	Tyr	Ser	Gly	Ala	Gly	Asp	Gly	Ser	Gly	Met	Gly	Ala		
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Val	Gly	Gly	Thr	Pro	Ser	Asp	Cys	Arg	Tyr	Ile	Leu	Thr	Pro	Gly	Gly		
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Leu	Ala	Glu	Gln	Pro	Gly	Gln	Ala	Glu	His	Gln	Pro	Glu	Ser	Pro	Leu		
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Asn	Glu	Thr	Gln	Arg	Leu	Leu	Leu	Gln	Gln	Gly	Leu	Leu	Pro	His			
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Ser	Ser	Cys	Ala	Asp	Ala	Ser	Leu	Lys	Met	Ala	Asp	Pro	Asn	Arg	Phe		
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